

RESPONSES TO OCTOBER 14 BI-STATE LEGISLATIVE COMMITTEE QUESTIONS

December 13, 2024

- 1. Can you share more information about the traffic modeling assumptions used to calculate traffic congestion/growth for Columbia River Crossing (CRC) and the Interstate Bridge Replacement (IBR) program? What updates were made to traffic modeling since CRC? What led to the discrepancy in projected vs actual traffic congestion growth rates since CRC?**

Travel demand modeling is an essential component of planning for regional infrastructure improvements such as highway and transit projects. The process of travel demand forecasting uses what is known about the existing world to predict what conditions may be like in the future. It is not a guess or an estimate, but a projection based on empirical data and foreseeable circumstances. The transportation modeling used in Portland-Vancouver metropolitan region is peer-reviewed and validated against observed data. The regional travel demand model used in the Portland-Vancouver metropolitan region is jointly developed and maintained by Oregon Metro (Metro) and Southwest Washington Regional Transportation Council (RTC). This model is used in conjunction with other tools to develop the analysis used in the NEPA work for the IBR Program and was used in this way to support CRC as well.

The travel demand modeling and traffic analysis data presented in the IBR Draft Supplemental Environmental Impact Statement (Draft SEIS) is based on the most current information available when the IBR Program started modeling work to support the Draft SEIS: the 2018 Regional Transportation Plan (RTP) jointly developed and adopted by both Metro and the RTC. The 2018 RTP assumed a 2015 base year and 2040 future year. In coordination with regional partners, the regional travel demand model was extended to the year 2045 for use in the IBR Program as well as other ongoing major projects in the region. In the case of CRC Project, the RTP used at the time was approved in 2004 with updates made to use a 2005 base year and 2030 future year.

Regarding the updates to the model since CRC, the IBR Program modeling is similar to the CRC modeling in terms of using Metro's model structure which includes calculations to arrive at the number of trips that will be made (trip generation), where they will go (destination choice), how they will get there (mode choice) and what route they will take (assignment). However, the model used for the IBR program has been updated to use newer household survey data collected since the CRC program modeling was completed. Updating the model with new household survey data is important because it considers how people change their travel

behavior over time. Models are updated every 10 to 15 years using data from new household surveys.

The regional travel demand model produces forecasts using a set of assumptions developed at a point in time based on reasonably foreseeable conditions for future year No-Build and Build Alternatives. Great care goes into the development of these assumptions, but there is inherent variability in travel forecasts that stems from a combination of factors that influence people's travel behavior. Several key sources contribute to this variability including the following:

- Economic factors – economic growth or recession can lead to changes in employment rates and income levels.
- Technological advancements – innovations in transportation technology (e.g., electric vehicles, autonomous vehicles and ride-sharing services) can change traditional travel patterns and influence demand.
- Land use and development – urban planning and land use policies can influence the locations of households and employment within the region.
- Social and cultural factors – changes in work-from-home trends or shifts in societal values towards sustainability can alter commute patterns.
- Policy and regulation – government policies, regulations and incentives related to transportation (e.g., fuel prices, toll rates, public transportation investments and environmental regulations) can have an impact on travel demand.
- External events – unexpected events such as natural disasters and pandemics (such as COVID-19) can disrupt regular commute patterns and influence travel behavior.

While each of these items involves an element of uncertainty, the assumptions that are made for the Regional Travel Demand Model have been made in coordination with city, county, regional and state and federal partners along with historical travel behavior trends specific to this region to allow for reasonable comparison between a No-Build and Build condition. This was consistently done for both CRC and the IBR Program. The model used for the IBR program accounts for real-world changes in the Portland Vancouver metropolitan area that have occurred in each of the items listed above since the forecasts were completed for CRC.

As summarized in the bullets above, forecasts are based on the set of assumptions developed at that point in time. The CRC forecasts were based on the RTP adopted in 2004 and the assumptions about economic factors, land use including population and employment factors, policies, and current events at that point in time. The CRC forecasts occurred prior to the unpredictable event of the recession which occurred between 2007 and 2012. Population and employment forecasts are adjusted every 5 years to match current economic patterns. This allows the numbers to reflect changing economic conditions considering things such as growth and recessions. The next set of RTP forecasts from Metro/RTC included the impacts of the recession on the land use forecasts and this has continued into every subsequent RTP update.

Looking into historical river crossing volumes also helps provide an example of how trends change over time. Prior to 1980, total river crossing volumes grew at almost 11% per year. Between 1983 and 2005 the river crossing volumes grew at almost 5.5% per year. Between 2005 and 2020, including the dip during the recession, total river crossing volumes have grown at about 1.5% per year. Peak period congestion on the two river crossings (I-5 and I-205) impacts these volumes as well as other modal improvements including transit. The Interstate Bridge first showed peak period congestion in the mid-1990s, while the I-205 Glenn Jackson Bridge first showed peak period congestion in the early 2000's. Future travel demand forecasts take into account all of those factors when developing the next set of travel demand forecasts.

While traffic forecasts did not grow at the rate forecast during the CRC EIS due to the unpredictable recession between 2007 and 2012 as well as the CRC program not being implemented, cross river traffic volumes have grown by an average 1.5% per year, outside of the timeframes of a pandemic or recession. The assumption for the IBR modeling forecasts is that future cross river growth rates would continue consistent with historical growth rates of about 1% per year taking into account unpredictable events, congestion on constrained river crossing facilities, increased multi-modal opportunities, and variable rate tolling.

2. Can you provide a detailed breakdown of the displacements in Oregon and Washington? What are you assuming from the cost estimate range will be attributed to those properties? What are the impacts to tax revenues? Would the rest of the county cover the cost of paying for the reduced tax revenues?

The Draft SEIS identifies 35 business and 43 residential displacements in Oregon and Washington.

In Oregon, 24 businesses and 36 residences would be displaced through the IBR program's proposed acquisitions.

In Washington, the proposed acquisitions would result in 11 businesses and seven residences displaced. With the proposed I-5 westward shift alternative, 33 additional residences and three additional businesses would be displaced in Washington.

Note that the count of business displacements does not include spaces that were observed as vacant during the analysis. Property impact information will continue to be updated and included in the Final SEIS.

Based on the 2023 cost estimate, we would anticipate that the cost for the ROW phase of the program would be approximately 4%-5% of the cost estimate range of \$5B-\$7.5B. Cost estimates will be refined as the federal review process progresses and design of IBR investments advances. The proposed property acquisitions would have an effect on tax revenue. To calculate those impacts, the program used estimated assessed values, property tax data and county budget information from 2022. The impacts of the proposed Oregon

acquisitions on tax revenue total an estimated \$657,200 of lost revenue, which represents less than 0.2 percent of the Multnomah County budget for 2022. The impacts for the proposed Washington acquisitions on tax revenue total an estimated \$212,300 of lost revenue, which represents 0.33 percent of the Clark County budget for 2022. The question of whether the counties would raise tax revenues elsewhere to cover the shortfall would be up to the counties.

The Interstate Bridge Replacement program anticipates gross economic benefits that nearly double the cost of the program. Our analysis shows a total gross economic activity of \$11.6 billion and a minimum net new economic activity of \$3.6 billion.

3. Did IBR consider induced demand in the Draft SEIS? What is the explanation behind a second auxiliary lane not creating more traffic?

As part of the work completed for the IBR Program, we analyzed indirect impacts of the Modified Locally Preferred Alternative (LPA) including the potential for induced demand. The analysis found that the Modified LPA will accommodate the level of regional growth that is already anticipated, but auxiliary lanes do not increase regional highway capacity. Therefore, there would be a low potential for additional indirect effects or induced demand at the regional level.

Induced demand is addressed in the [Draft Supplemental Environmental Impact Statement](#):

- The [Draft SEIS Transportation Technical Report](#) addresses indirect effects of the Modified LPA and the potential for induced (land-use) growth and induced traffic demand.
- Further information about induced growth can be found in the [Draft SEIS Land Use Technical Report](#).

Transportation demand is directly influenced by the land use in the area (population and employment forecasts); trips between origins and destinations are determined by the land use policies implemented by the local planning agencies. The replacement Columbia River Bridge and other elements of the Modified Locally Preferred Alternative will have a low potential to induce demand, as the land uses along this corridor are developing consistently with applicable plans and policies, which will continue to be reinforced by metropolitan planning organizations on both sides of the Columbia River.

Auxiliary lanes are ramp-to-ramp connections designed to give drivers distance to speed up or slow down before entering or exiting the roadway, which improves safety in the corridor. They are not through lanes and are not the same as adding an additional lane. These connections reduce localized bottlenecks and optimize traffic flow by giving drivers space to merge, diverge, and weave safely. Benefits of auxiliary lanes include improved travel time, reduced likelihood for crashes, anticipated reduction in greenhouse gas emissions due to less congestion, and safety improvements. The year 2045 forecast volumes for the Modified LPA and Modified LPA

with 2 auxiliary lanes are similar enough to be considered the same due to the design features of only adding auxiliary lanes to support safe merging, diverging, and weaving versus adding an entire new lane that extends five miles and influences multiple neighborhoods altering travel patterns.

4. How does the addition of light rail change traffic patterns? How much has land use impacted changing travel patterns and demand for LRT? Do you anticipate that LRT will drive Transit Oriented Development in the region?

The IBR Program Modified LPA includes the extension of the Yellow Line Light Rail Transit north from the current terminus at the Expo Center to a terminus location near Evergreen Boulevard along I-5 in Vancouver. The Yellow Line extension would include new light-rail stations at Hayden Island, the downtown Vancouver Waterfront, and Evergreen Boulevard. The Yellow Line LRT would operate at average 6.7-minute frequencies during the peak and 15-minute frequencies during the off-peak between downtown Portland and the Evergreen Station in Vancouver for the IBR Program Modified LPA. Yellow Line service to Vancouver would operate 20 hours per day (5 a.m. to 1 a.m.) 7 days a week.

In addition to the LRT extension, C-TRAN express bus service would be included as part of the IBR Program Modified LPA with Routes 101, 105 and 190 all using bus-on-shoulder for the portions of their routes that run on I-5 through the IBR Program Area. Routes 101 and 105 would also include peak period frequency increases to 10 minutes and 5 minutes respectively.

Several local bus routes would be modified and adjusted to optimize transit transfer opportunities at the new transit stations proposed. Several existing transit centers and park and ride facilities are used for bi-state travel between Clark County and Oregon. These are served by various combinations of local, express, and regional bus routes, and BRT and LRT.

All of these proposed transit service and routing changes will change current travel patterns as users will have multimodal options that do not exist currently.

As described in the Land Use Technical Report of the Draft SEIS, the character of development in downtown Vancouver has changed greatly during the past decade. The focus of the downtown and waterfront areas has broadened from employment-related uses to tourism and recreational development, retail shopping, meeting and convention activities, housing, and entertainment. Along with revitalizing overall downtown activity, development has emphasized new residential opportunities and revitalization of the retail core and central waterfront. Research has shown a strong connection between increased land use density and transit ridership. The increased density in downtown Vancouver, along with the activation provided by a greater diversity of land uses, is much more supportive of LRT than previous land use patterns in the city. The same is true of the redevelopment planned for Hayden Island.

FTA encourages transit systems to undertake joint development projects at and around transit stations where such projects are physically or functionally related to the provision of transit service, and where they increase transit revenues through proceeds from the joint development.

The IBR Program supports station area planning and will accommodate joint development projects and transit-oriented development to encourage higher density, pedestrian friendly, mixed-use developments that facilitate transit use and other modes of transportation. These projects would be independently advanced but may include coordination with the IBR Program.

Previous Oregon and other national light rail projects demonstrate how coordinated land use and zoning alongside transit and infrastructure investment can deliver wider regional benefits. TriMet's Westside light rail extension that connects Hillsboro with Portland through Beaverton has supported a wide range of economic and community benefits by delivering housing and linking communities with jobs and other services. Although TriMet's oldest light rail infrastructure is over 30 years old, they continue to see sustained demand for more homes and development around their stations as lifestyles and demographics change.

Vancouver and Metro recently led a consortium of project partners in 2023 and 2024 in applying for an FTA TOD Pilot Planning Grant. Unfortunately, while both efforts were unsuccessful, efforts are ongoing to look for other ways to fund this work. Metro is considering making changes to the Expo Center to turn it into an indoor sports complex, which is adjacent to the existing TriMet Expo Center station. This change would change the existing use and development around the station. The IBR program is coordinating with Metro on design that is complementary to this possible approach.

Both the City of Vancouver and the City of Portland look to transit investments and growth around them as a way to increase transit use. The City of Portland Comprehensive Plan Modal Policy 9.7 calls for the city to "Use transit investments as a means to shape the city's growth and increase transit use. In partnership with TriMet and Metro, maintain, expand and enhance Portland Streetcar, frequent service bus, and high-capacity transit, to better serve centers and corridors with the highest intensity of potential employment and household growth."

The City of Vancouver Comprehensive Plan Community Development policy CD-2 calls for the city to "Encourage higher density and more intense development in areas that are more extensively served by facilities, particularly transportation and transit services." The City of Vancouver plan also notes that "Major improvements such as the planned high-capacity transit lines support the growth goals and mode share strategies of the Plan as well as growth center plans for the Vancouver City Center Vision and other identified centers." These transit supportive growth policies will help encourage development that results in more transit trips in the future.